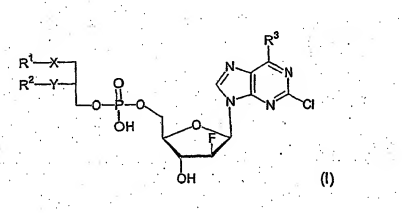
Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application. Material added is indicated by underlining and material deleted is indicated by ~~strikeout~~.

Listing of Claims:

1. (Previously Presented) A nucleotide derivative of formula 1



(I)

wherein

R^1 is a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, which is unsubstituted or substituted at least once by halogen, C_1-C_6 alkoxy, C_1-C_6 alkylmercapto, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylsulfinyl or C_1-C_6 alkylsulfonyl groups;

R^2 is hydrogen, a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, which is unsubstituted or substituted at least once by halogen, C_1-C_6 alkoxy, C_1-C_6 alkylmercapto, C_1-C_6 alkoxycarbonyl or C_1-C_6 alkylsulfonyl groups;

R^3 is amino or OR^4, wherein R^4 is C_1-C_8 alkyl;

X is selected from the group consisting of a sulfur atom, a sulfinyl group and a sulfonyl group;

Y is oxygen;

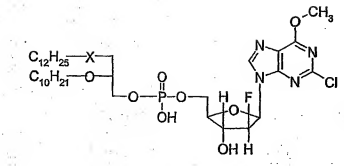
whereby when R^3 is amino, said amino group may be unsubstituted or substituted by a known amino protecting group,
their tautomers, their optically active forms and racemic mixtures, and their physiologically acceptable salts of inorganic and organic acids or bases.

2. (Previously Presented) The nucleotide derivative according to claim 1, wherein R^1 is a straight-chain C_8-C_{15} alkyl group, which is unsubstituted or substituted by a C_1-C_6 alkoxy or a C_1-C_6 alkylmercapto group.

3. (Previously Presented) The nucleotide derivative according to claim 1, wherein R^2 represents a straight-chain C_8-C_{15} alkyl group, which is unsubstituted or substituted by a C_1-C_6 alkoxy or a C_1-C_6 alkylmercapto group.

4. (Previously Presented) The nucleotide derivative according to claims 1, wherein R^3 is OCH_3.

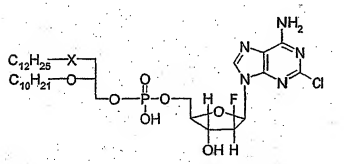
5. (Previously Presented) The nucleotide derivative according to claim 1, wherein the compound is:



wherein X is sulfur, sulfinyl or sulfonyl.

6. (Previously Presented) The nucleotide derivative according to claim 1, wherein R^3 is NH_2.

7. (Previously Presented) The nucleotide derivative according to claim 1, wherein the compound is



wherein X is sulfur, sulfinyl or sulfonyl.

8. (Previously Presented) A pharmaceutical composition comprising a compound according to claim 1 in combination with a pharmaceutically acceptable adjuvant or vehicle.

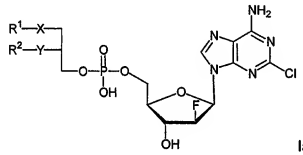
9. (Currently Amended) A method for treating malignant tumors comprising administering to a patient in need of such treatment an amount of a compound

according to claim 1 effective to treat said tumors, wherein said tumor is a carcinoma.

10. (Canceled)

11. (Canceled)

12. (Currently Amended) A method of synthesis of compounds of the formula Ia:



Ia

wherein R^1 is a straight-chain or branched, saturated or unsaturated alkyl residue having 1-20 carbon atoms, optionally mono- or polysubstituted by halogen, C_1-C_6 alkoxy, ~~Cl-C6~~ C_1-C_6 alkylmercapto, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylsulfinyl or C_1-C_6 alkylsulfonyl groups;

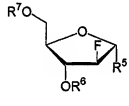
R^2 is hydrogen, a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, optionally mono- or polysubstituted by halogen, ~~C 1-C6~~ C_1-C_6 alkoxy, ~~C 1-C6~~ C_1-C_6 alkylmercapto, ~~C 1-C6~~ C_1-C_6 alkoxycarbonyl ~~o r C 1-C6~~ or C_1-C_6 alkylsulfonyl groups;

X is selected from the group consisting of a sulfur atom, a sulfinyl group and a sulfonyl group;

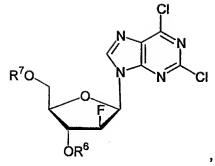
Y is oxygen;

comprising:

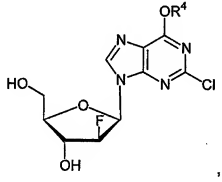
(a) reacting 2,6-dichioroadenine with an arabinofuranosyl derivative of the formula:



wherein R^5 is bromo or chloro and R^6 and R^7 are independently acetyl or benzoyl, in the presence of a base which is potassium t-butoxide or potassium t-amylate and a solvent to form the dichloropurine nucleoside derivative:



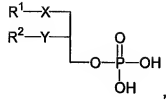
(b) subjecting said dichloro purine nucleoside derivative to basic conditions with an alkaline hydroxide and R^4OH as solvent to provide for both deprotection and an aromatic nucleophilic substitution reaction to provide the 6-alkoxy-2-chloro purine nucleoside derivative of general formula IIIb:



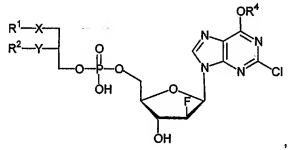
IIIb

wherein R^4 is C_1-C_8 alkyl;

(c) reacting in an inert solvent said 6-alkoxy-2-chloro purine nucleoside derivative with the compound:

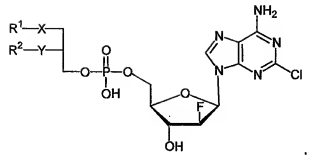


which is activated by reaction with 2,4,6-triisopropyl-benzene sulfonic chloride to provide the conjugated 6-alkoxy-2-chloro purine nucleotide derivative of general formula Ib:



Ib

(d) subjecting said conjugated 6-alkoxy-2-chloro purine nucleotide derivative to a solution of ammonia, which provides for aminolysis, to prepare the conjugated 2-chloroadenine derivative:



13. (Previously Presented) The method of claim 12 wherein, said hindered potassium base is potassium t-butoxide or potassium t-amylate.

14. (Previously Presented) The method of claim 12, wherein said solvent for reacting said 2,6-dichloroadenine and said arabinofuranosyl derivative is a mixture of acetonitrile, t-butanol and 1,2-dichloroethane.

15. (Original) The method of claim 12, wherein R^4 is methyl.

16. (Original) The method of claim 12, wherein R^5 is bromo.

17. (Previously Presented) The method of claim 12, wherein R^6 and R^7 are benzoyl.

18. (Original) The method of claim 12, wherein R^1 and R^2 are individually a straight-chain C_8-C_{15} alkyl group, which is unsubstituted or substituted by a C_1-C_6 alkoxy or a C_1-C_6 alkylmercapto group.

19. (Original) The method of claim 12, wherein R^1 is $C_{12}H_{25}$ and R^2 is $C_{10}H_{21}$.

20. (Previously Presented) The method of claim 12, wherein the alkaline hydroxide is sodium hydroxide.

21. (New) The method of claim 9 wherein the carcinoma is selected from the group consisting of human colon carcinoma, human ovarian carcinoma, human breast carcinoma, human prostate carcinoma, human pancreatic carcinoma and human cervical carcinoma.